

both geologist and tourist will find it a useful book, suggestive of valuable thoughts for the speculative, and of good lines of research for the practical man—helping, in the study, to the memory of former labours in this region, and, in the field, showing where wholesome pleasure may be gleaned in hunting out the history of rock and fossil, of hill and lake, and, indeed, of the world itself.

A Monograph of the Recent British Ostracoda. By GEORGE STEWARDSON BRADY, Esq. (Trans. Linn. Soc. vol. xxvi.)

THE whole of the last-issued Part of the Linnean Transactions is occupied by the monograph which we are about to notice, and which extends to 143 pages, illustrated by nineteen plates.

We have here a most valuable contribution to the history and elucidation of the Ostracoda. The study of this section of the Crustacea has, both on the Continent and in the British Islands, been recently attracting much greater notice, and, we venture to prophecy, is destined to occupy a much larger share of the attention both of zoologists and geologists than it has hitherto done. This is the only order of the Crustacea the remains of which have been found fossil throughout a long series of beds in considerable abundance; and they are likely, when more diligently searched for, hereafter to render important service in assisting the geologist in the classification and sequence of strata. They present certain advantages for this purpose over the Mollusca and other larger organisms, because the small and generally strong valves of their minute carapaces will often escape destruction when it fares badly with their larger brethren. For example, glacial action, which will grind to pieces all univalve and bivalve shells, may be expected to leave unharmed the *Cythere* or the *Bairdia*—just in the same way as while we crush the snail to atoms under our foot, the little ant which was there at the same time, so far from objecting to the operation, turns smacking his lips to the dainty morsel which we leave him to enjoy. A more careful washing of glacial clays and attentive search for the Ostracoda which they may contain will be found no unimportant step in the determination of the circumstances under which a particular bed was deposited, as showing whether it owes its origin to subaërial or true glacial ice, or was a submarine or icebergal deposit. Indeed, so abundant are fossil specimens, that with our present workers in the field, Messrs. Brady, Norman, Robertson, &c. collecting the recent forms, and Messrs. Crosskey, Robertson, &c. the Tertiary and, more especially, Quaternary forms, it has become a mere toss-up whether a species shall first be found fossil and then recent, or *vice versâ*. Of the species described by Mr. Brady, no less than fifty-six marine and six freshwater species have already been met with fossil in the glacial and other more recent deposits; and what makes this the more striking, as showing how completely this study is even now in its infancy, is the fact that no less than forty-three out of the fifty-six marine species referred to, and which are

now known as fossil, lived unnoticed in our seas until the last five years; and, indeed, a considerable number of them are for the first time recorded in this monograph.

Acquaintance with freshwater species of Ostracoda dates back to the middle of the last century. The investigation of the species has been gradual and continuous; and at the present time we are tolerably conversant with those members of the order which inhabit the streams, lakes, and ponds both of the British Islands and of continental Europe; but with the marine species the case has been different. It was in 1785 that O. F. Müller first recorded the existence of sea forms, and in his 'Entomostraca' established the genus *Cythere* and described five species. There the matter stood, without any fresh light being thrown upon the subject, until Dr. Baird, in 1837, published six additional species in the 'Mag. of Zool. and Botany.' In the following year M.-Edwards established the genus *Cypridina*, containing a single species. From that time until 1850, when Dr. Baird published his 'History of the British Entomostraca,' matters were at a standstill. That work made us acquainted with seven more *Cythereæ* (together with a freshwater form which was assigned to that genus), with three species of recent *Cythereis*, and with two *Cypridinae*. The 'List of the British Marine Invertebrate Fauna,' published by the British Association eleven years subsequently (1861), only contains two additional species, *Cypridina Marica* and *C. interpuncta*, which had been published by Dr. Baird. In that year the Rev. A. M. Norman described a fifth British *Cypridina*, and recorded the *Philomedes longicornis* of Lilljeborg from Plymouth in the 'Annals of Natural History.' In the following year he added five *Cythereæ* and a *Cythereis* in the same journal; and in 1864 (Nat. Hist. Trans. Northumberland and Durham) eight more *Cythereæ* and another *Cythereis*. Lastly, in the 'Report Brit. Assoc.' 1866, Mr. Brady characterized nine additional marine species from the Hebrides, distributing them in the genera which had just been established by G. O. Sars. Thus, when Mr. Brady commenced his monograph, there were (deducting species proved to be synonymous) forty-four marine Ostracoda described, and twenty more of which the names had been recorded in his paper just referred to.

On the Continent the marine Ostracoda had, until quite recently, been wholly neglected. Since Müller's time, beyond a *Cypridina* noticed from the Mediterranean by Costa and Philippi, and two Norwegian species (which, however, are synonymous with previously described British forms), no additions had been made to the fauna. In 1865, however, G. O. Sars published, in the 'Vid.-Selskabets Förhandlingar,' his "Oversigt af Norges marine Ostracoder," a monograph which at once placed the study of this order of animals on a new footing. He had not only collected seventy-seven species in the Scandinavian seas, but, with the greatest skill and anatomical research, so investigated their structure and anatomy that he was able to establish a large number of genera upon what would seem to be valid and sound characters.

Taking Sars's 'Oversigt' as the basis of his work, Mr. Brady has,

in the monograph before us, fully elucidated the animal as well as the shell of the species he describes; and, carrying still further the system of classification inaugurated by the Norwegian naturalist, he presents us with a history of one hundred and forty-one species, distributed in twenty-eight genera—certainly an extraordinary advance upon the forty species and five genera which represented the state of our knowledge of this order at the time of the publication of ‘The Natural History of the British Entomostraca.’

The work before us shows evidence of the greatest care in preparation and in execution. The descriptions of both shells and animals (the latter given in a large number of instances) are systematically and well drawn up, while the beauty of the plates leaves nothing to desire. They represent the carapace of each species in its various positions, and fully illustrate the anatomy of the genera. Both zoologists and geologists may thank the Linnean Society for the publication of this extensive and important monograph.

MISCELLANEOUS.

On the Habits of the Volutes. By Dr. R. O. CUNNINGHAM.

Valparaiso, Oct. 9, 1868.

MY DEAR SIR,—In the April number of the ‘Annals and Magazine of Natural History,’ which I received not long since, I find at p. 310 a note by you on the habits of Volutes, in which you remark that they are rarely collected with their animals, except when they are accidentally thrown ashore after a storm, and that this is owing to their sand-burrowing propensities. This I have found to be the case as regards the species of the genus inhabiting the Strait of Magellan. During the first season I spent in that region, I only succeeded in procuring two live specimens of *Voluta magellanica*, till the occurrence of a violent easterly gale caused numbers to be thrown on the beach in the neighbourhood of the Chilian settlement at Punta Arena. That they only existed in comparatively shallow water I considered sufficiently proved by the fact that I never succeeded in dredging any, though they were evidently far from rare, judging from the numbers of dead shells to be picked up in most localities in the eastern part of the Strait. I obtained a second species of Volute, of which there are no specimens in the collection of Magellanic shells in the Museum at Santiago, at low water at Cape Possession in January 1867. I found it burrowing in considerable numbers in the fine sand of the beach; and a few occurred upon clusters of live *Mytili* attached to stones, and, I believe, were feeding on them after the fashion of our *Purpura lapillus*, though I could not be certain of the fact. The body of the animal in